Disruptive air & space solar PowerFilm launched

Iowa Thin Film Technologies Inc has launched its PowerFilm Air and Space Series products for solar powering and recharging air and space vehicles.

PowerFilm is claimed as a disruptive technology for air and space power. It is lightweight, durable, and can reduce up to 90% the cost of photovoltaics for air and space power.

ITFT has supplied PowerFilm to NASA and is working with Lockheed Martin on the Pentagon's High Altitude Airship programme.

The company also has a development programme with the Air Force Research Laboratory (AFRL) at Kirtland Air Force Base to continue to improve low-cost, lightweight solar products for air and space applications.

"Our products are well suited for air and space applications since they are light weight, monolithically integrated, and can be supplied on a roll for easy integration," said Dr. Frank R. Jeffrey, president of Iowa Thin Film Technologies.

PowerFilm products are semiconductor devices deposited on a paper-thin, durable, flexible polymer substrate.

PowerFilm solar panels are monolithically integrated which improves durability and reduces cost by eliminating costly and failure-prone manual connection of individual solar cells. Modules are manufactured on a roll-to-roll manufacturing technology.

The company is developing thin film transistors and diode products for flat panel displays, RFID tags, digital memory for camera and audio, medical imaging, and electronic paper.

Web: www.iowathinfilm.com

Jobs are in nano, but depend on funding

The Humboldt-University of Berlin is offering a post doc position for MBE and optical properties of organic/inorganic nanostructures: The project *"Hybrid excitations in organic-inorganic nanostructures: epitaxial growth and optical properties"* is in the frame of special research range 448, "Mesoscopically organised composites".

The basic idea of the project is to combine inorganic semiconductor nanostructures (i.e. quantum well or quantum dot structures based on II-VI materials) with an organic adsorbate layer. Coupling of the electronic excitations at the interface should create hybrid states with entirely new photonic properties.

The post-doc position will be dedicated to growth of the structures by molecular beam epitaxy (MBE) and their optical characterisation. While MBE of inorganic semiconductors is well established, the epitaxial growth of small conjugated molecules is not well understood yet.

Therefore the main topic will be the investigation of the growth mechanism of small conjugated molecules on inorganic semiconductor surfaces. In-situ characterisation of the crystal structure and morphology is performed with scanning force microscopy and electron diffraction.

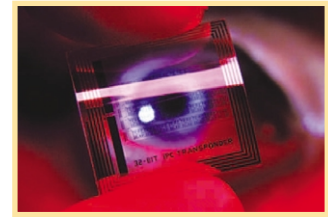
Information about the electronic structure at the interface will be obtained (in collaboration) by photoelectron spectroscopy. The optical properties of the hybrid structures will be characterised employing transient photoluminescence and photoluminescence excitation spectroscopy, if necessary in confocal geometry and in applied electric and magnetic fields.

The nonlinear optical response will be studied by pump-probe measurements and transient four wave mixing.

Good knowledge in molecular spectroscopy and/or molecular beam epitaxy of organic molecules is required. The post-doc position is available for a 3 year period starting from January 1st 2004, provided that the grant commission of the German research council (DFG) confirms the funding in November 2003.

E-mail: sylke.blumstengel@physik.hu-berlin.de

Siemens in polymer chip JV



Siemens AG has formed a JV with Leonhard Kurz GmbH to work on polymer ICs manufactured using printing techniques.

They will build on Siemens' expertise in polymer materials and Kruz's print production expertise. PolyIC GmbH & Co KG is 51% owned by Kurz and 49% by Siemens.

TEL & Clariant establish suppression process

Tokyo Electron Ltd will begin sales of a process resulting from joint development work with Clariant KK, the Japan subsidiary of Swiss manufacturer Clariant.

Last year, the companies carried out the joint work on surfactant rinse solutions and processes for the formation of ultra-fine patterns that are utilised in next-generation semiconductor production.

The surfactant rinse solution is to suppress pattern collapse, and is based on a concept that uses surfactants to reduce capillary forces that cause pattern collapse, facilitating further miniaturisation of photoresist patterns.

TEL worked on the materials evaluations and process development. Clariant carried out the surfactant work. Using the rinse process, TEL has established its Clean Track equipment, capable of 90nm mass production.